Next generation robotic surgery: robotic vision based safe endoscopic spine surgery

Fact Sheet

Project Information

X-BONECUT
Grant agreement ID: 873965

Status
Ongoing project

Funded under
H2020-EU.3.
H2020-EU.2.3.
H2020-EU.2.1.

Overall budget
€ 3 004 562

EU contribution
€ 2 103 193,40

Coordinated by
DENEB MEDICAL, SL
Spain

Project description

Robot surgeons for spinal endoscopy

In the past decade, the field of spinal surgery has benefited greatly from technological advancements – from diagnostic imaging and 3D printing to robotic surgery. With the speed of technological innovation increasing, robot-assisted surgery has allowed doctors to perform complex procedures with more precision. The EU-funded X-BONECUT project is taking robot-assisted surgery to the next level, developing a surgical robot that does not need assistance. Its robot is fitted with 'eyes' to aid in decision making. Coordinated by Spain’s Deneb Medical, the
Objective

All surgical robotic solutions available in the market today are precise manipulators rather than robots, as none of them takes its own decisions nor does automatize any process. For surgical robotics to make the next paradigm change, the ability for the robots to take their own decisions must be developed. To take their own decisions, they need to be aware of the environment where they are working. In other words: they need to have robotic eyes. This is exactly what Deneb Medical (DM) is developing with its X Platform. This surgical robotic platform approach enables multiple market applications, for which Deneb Medical has defined a product pipeline. The first product in this pipeline is DM’s X-BoneCut.

Today the most important surgical problem, is the elimination of surgical unintended damage. DM’s X-BoneCut will be a surgical robot tailored to perform endoscopic lumbar surgeries in a safe and fast way, eliminating the risk of surgical unintended damage to duramater (incidental durotomy) and nerves, reducing overall surgery time and with an easy learning curve. X-BoneCut will add to private and public health institutions up to 7B$ in value in EU and US, as it will help reduce total average direct costs to hospitals in 7B$.

DM’s business model is based on the development, manufacturing and sale of the robot and its disposable. The revenue model includes the sale to the distributor of a) the robotic system b) the disposable needed to perform surgeries with it and c) the robot’s maintenance contract. DM’s strategy is to install a big number of robots and supply the disposables, so the revenue portion of the disposable will increase throughout the years.

X-BoneCut is based on a DM’s already patented technology and DM knows no competitor that is developing a similar device with a similar functionality. Further DM is working on 3 additional patent applications that will help create stronger competitive advantages, not only for the short but also for the longer term.

Field of science

/medical and health sciences/health sciences/public and environmental health
/medical and health sciences/clinical medicine/surgery/robotic surgery
/engineering and technology/electrical engineering, electronic engineering, information engineering/electronic engineering/robotics
/social sciences/economics and business/business and management/commerce
Programme(s)

Topic(s)

Call for proposal


Funding Scheme

SME-2 - SME instrument phase 2

Coordinator

DENEB MEDICAL, SL

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Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

EU contribution
€ 2 103 193,40

Contact the organisation

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